

Effects and Correction of Sextupoles
in the
Dipoles

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b_2 in dipoles Correction

(1)

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	Magnetization b_2	Saturation b_2
$b_2 / 10^{-4}$	1.6 (10)	3.2 (20), () are b_2 units
Chromaticity Generated	48, -48	96, -96
$\Delta b_{2,H} / b_{2,H}$	-0.5	-1
$\Delta b_{2,V} / b_{2,V}$	0.6	1.2

Natural Chromaticity, -74, -65

b_2 for Natural Chromaticity, $30, -60 \times 10^{-4}$ (200, -400)
 $l = 1 \text{ m}$

b_2 Correction coil Capacity, 196×10^{-4} (1200)

Effects of b_2 in dipoles are appreciable,
but may be correctable using lumped
correction coil b_2 .

Stability

Systematic Stop band at $\nu = 34 = \frac{102}{3}$

$\Delta\nu = 0.3$ due to natural Chromaticity Correction

operating $\nu = 34.4$ is close to this stop band.

Proposed Tracking Study

b_n present, b_2 in dipoles plus b_2 in correction magnet

Study

- 1) stability limits
- 2) ν dependence on betatron amplitude, $\nu(A)$
- 3) ν dependence on $\Delta p/p$, $\nu(p)$
- 4) ν -values, 34.6 and 34.9

$$\gamma_x = \frac{1}{4\pi} \cdot \frac{NL}{BP} (2) \beta_x \chi_p \frac{\sigma_p}{p} B_3$$

$$= \frac{1}{4\pi} \frac{(144)(10.7)}{8400} 2(26.4)(1.27)(.01)$$